AMENDED PATENT CLAIMS

1. (original) A heat insulating layer with a melt above 2500°C with a thermal expansion coefficient in excess of 8 x 10^{-6} K^{-1} and a sintering temperature greater than 1400°C

characterized in that

the heat insulating material has a perovskite structure of the general formula A_{1+r} $(B'_{1/3+x}$ $B''_{2/3+y})O_{3+z}$ in which

A = at least one element of the group (Ba, Sr, Ca, Be),

B' = at least one element of the group (Mg, Ca, Sr, Ba, Be),

B" =at least one element of the group (Ta, Nb), and

$0.1 < r, x, y, z < 0.1$;

or the heat insulating material has the perovskite structure of the general formula A_{1+r} $(B'_{1/2+x}$ $B''_{1/2+y})O_{3+z}$ in which:

A = at least one element of the group (Ba, Sr, Ca, Be),

B' = at least one element of the group (Al, La, Nd, Gd, Er, Lu, Dy, Tb)

B" =at least one element of the group (Ta, Nb), and

$0.1 < r, x, y, z < 0.1$.

2. (original) A heat insulating material according to claim 1 in which the heat insulating material has a composition wherein $r = x = y = z = 0$.

3. (currently amended) The heat insulating material according to ~~one of the preceding claims 1 to 2~~ claim 1 with a composition of the formula $Ba(Mg_{1/3}Ta_{2/3})O_3$.

4. (currently amended) The use of the heat insulating material according to ~~one of claims 1 through 3~~ as a heat insulating coating on the surface of the component.

5. (original) The use according to the preceding claim 4 in which between the component and the heat insulating component one or more intermediate coatings of ceramic glass or metallic material is provided.

6. (original) The use according to the preceding claim 5 wherein between the component and the heat insulating layer, a MCrAlY alloy is provided where M = Co, as Ni material for the intermediate layer.

7. (original) The use according to the preceding claim 5 in which between the component and the heat insulating layer a (platin-) aluminide layer is provided for an intermediate layer.

8. (currently amended) A method of making a heat insulating material according to ~~one of claims 1 to 3~~ claim 1 characterized in that the starting material is provided as carbonates and/or oxides corresponding to the aforedescribed stoichiometry in a mixture and this mixture is subjected to a solid state reaction whereby the heat insulting material thus produced has the corresponding stoichiometry and the perovskite structure.

9. (original) The method according to claim 8 wherein the mixture is so formed that the perovskite produced by the solid state reaction has a composition according to the formula A_{1+r} $(B'_{1/3+x}\ B''_{2/3+y})O_{3+z}$ or according to the formula A_{1+r} $(B'_{1/2+x}\ B''_{1/2+y})O_{3+z}$ with

$0.1 < r, x, y, z < 0.1$.

10. (currently amended) The method according to claim 8 ~~or claim 9~~ characterized in that the mixture is so made that the perovskite after the solid state reaction has a composition according to the formula A_1 $(B'_{1/3}\ B''_{2/3})O_3$ or according to the formula A_1 $(B'_{1/2}\ B''_{1/2})O_3$.

This preliminary amendment is submitted to reduce claim charges and to provided the cross reference of the present US phase of PCT application PCT/DE03/01924 to the international application according to Rule 78.

Respectfully submitted,
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